



Chemical User Safety & Health Requirements Roadmap

“CUSHR”

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Objectives

- History of the CUSHR effort
- Handbook development
- Handbook use



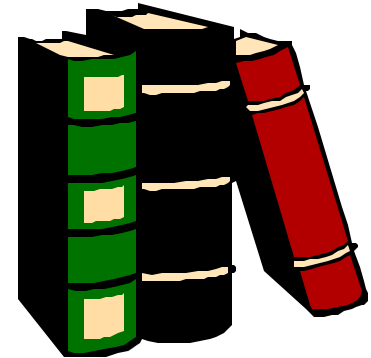
History

- Requirements help drive safe chemical work
- Complete knowledge of chemical safety and health requirements questioned
 - Numerous requirements
 - Holes thought to exist
 - Additional requirements needed?



History (cont.)

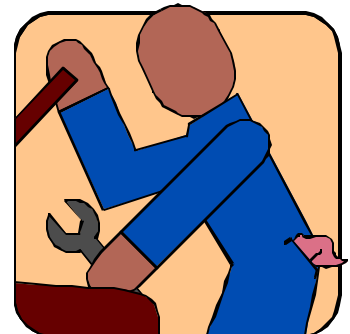
- Survey performed
 - Tested knowledge of chemical storage S&H requirements
 - Numerous DOE sites responded
 - Most sites aware of 30-75% of requirements





History (cont.)

- Why are so many chemical related S&H requirements not known?
 - Source documents organized by chemical class and not by work activity
 - Numerous sources exist (Federal Regulations, DOE Orders, National Standards, etc.)
 - No cross index between sources





History (cont.)

- CSTC team formed to investigate this issue
 - Small pilot study performed to determine if a requirements consolidation would be useful
 - Universal activity selected - Chemical Storage



Pilot Study: Chemical Storage Requirements Consolidation

- 13 source documents identified
- 225 requirements consolidated into 120
- Sections
 - Definitions
 - Requirements
- Survey developed
- Distributed to CSTC





Pilot Study (cont.)

- 24 surveys returned
- 8 indicated lack of familiarity with regulations
- 16 indicated this was correct approach
- 16 indicated this was added value
- 20 indicated very or somewhat useful
- CSTC consensus - continue the effort

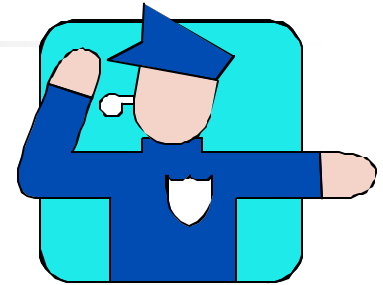


Handbook, Vol. 3 Organization

1. Hazard Analysis
2. Acquisition
3. Chemical Inventory and Tracking
4. On-Site Chemical Transportation
5. Chemical Storage
6. Hazard Controls
7. P² and Waste Minimization
8. Chemical Emergency Management
9. Disposition
10. Training

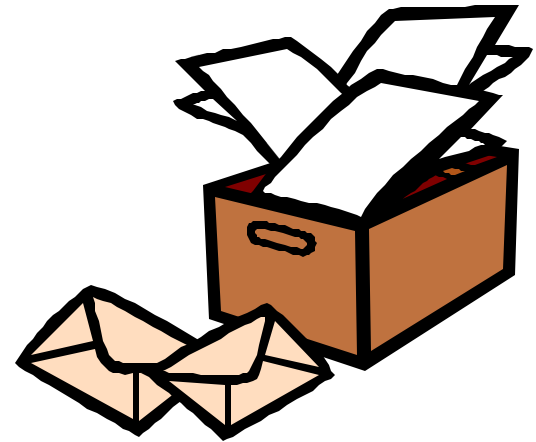
Rules for Handbook Development

- DO NOT CREATE ANY NEW REQUIREMENTS!!!
- Consolidate existing requirements
 - Only DOE Orders, federal requirements, and national standards
 - No local and state requirements included
- “Pointers” added to show source(s) of each requirement



Handbook Development Rules (cont.)

- Sources Included
 - CFRs (includes OSHA)
 - DOE Orders
 - NFPA
 - ANSI
 - CGA





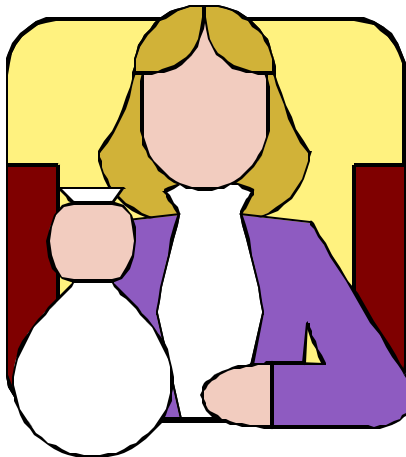
Results

- 110+ source documents used
- Approximately 1360 requirements consolidated into approximately 700
- 10 Chapters - Can be used together or each as a stand alone document
- Web version - hyperlinks to source documents when available



How To Use

- Example 1
 - Do I have to analyze the hazards associated with chemicals I use?
 - Go to Chapter 1, "Hazard Analysis"





Example 1

Sources ¹¹	Consolidated Requirements
	4.1 General (Applicable to all operations/activities involving chemicals)
ANSI Z49.1, 3.2.2.2; CGA P-1, 4.1; DOE 440.1A , 4(i); NFPA 30, 5.2; NFPA 45, 7.1; NFPA 45, 7.2.1.1, NFPA 430, 2.-1.1; NFPA 432, 4.7.1; 10CFR835.204(d)(2); 29CFR1910.106(e)(8); 29CFR1910.146(c)(1)- (d)(2); 29CFR1910.1450(e)(3); 48CFR970.5204-2(c)(2)¹²	4.1.1 Hazards associated with all activities involving chemicals that could put the employee at risk of injury or illness shall be evaluated. Those activities include, but are not limited to a) design of new facilities or modification of existing facilities and equipment, b) operations and procedures and c) equipment, products and services that are selected or purchased. <i>[NOTE: Numerous other substance-specific hazard analysis requirements can be found in 29CFR1910, Subpart Z]</i>



Example 1 (cont.)

4.1.1 "Hazards associated with all activities involving chemicals that could put the employee at risk of injury or illness shall be evaluated. Those activities include, but are not limited to a) design of new facilities or modification of existing facilities, b) operations and procedures, and c) equipment, products and services that are selected or purchased."



Example 1 (cont.)

Sources:

- DOE 440.1A, 4(i), "Identify existing and potential workplace hazards and evaluate the risk of associated worker injury or illness."
- NFPA 45, 7.1, "When a chemical is ordered, steps shall be taken to determine its hazards and to transmit that information to those who will receive, store, use or dispose of the chemical."

How to Use (cont.)

- Example 2
 - Can I store my acids and bases together?
 - Go to Chapter 5, "Chemical Storage"





Example 2 (cont.)

Sources ¹⁰	Consolidated Requirements
CGA P-1, 3.7.2; NFPA 45, 7.2.3.4; NFPA 55, 7.1.5.1.1;	4.1.7 Chemicals shall be stored compatibly and in a way to prevent contact with incompatible materials. This includes preventing liquids from flowing out of a chemical storage area into another area where they may be exposed to incompatible materials.



Example 2 (cont.)

4.1.7 "Chemicals shall be stored compatibly and in a way to prevent contact with incompatible materials. This includes preventing liquids from flowing out of a chemical storage area into another area where they may be exposed to incompatible materials."



Example 2 (cont.)

Sources:

- NFPA 45, 7-2.3.4, "Incompatible materials shall be segregated to prevent accidental contact with one another."
- NFPA 430, 2-4.2, "Oxidizers shall be stored to avoid contact with incompatible materials such as ordinary combustibles, combustible or flammable liquids, greases and those materials that could react with the oxidizer or promote or initiate its decomposition."

How to Use (cont.)

- Example 3
 - Am I allowed to use compressed gas cylinders as rollers to help move materials?
 - See Chapter 6, "Hazard Controls"





Example 3

Sources ¹⁰	Consolidated Requirements
ANSI Z49.1, 10.8.3.3; CGA P-1, 3.3.1; CGA G-1 5.1.10; 29CFR1910.253(b)(5)(ii)(K); 29CFR1926, 350(c)(1)	4.5.11 Compressed gas cylinders shall not be used as rollers or supports.



Example 3 (cont.)

4.5.11 "Compressed gas cylinders shall not be used as rollers or supports."



Example 3 (cont.)

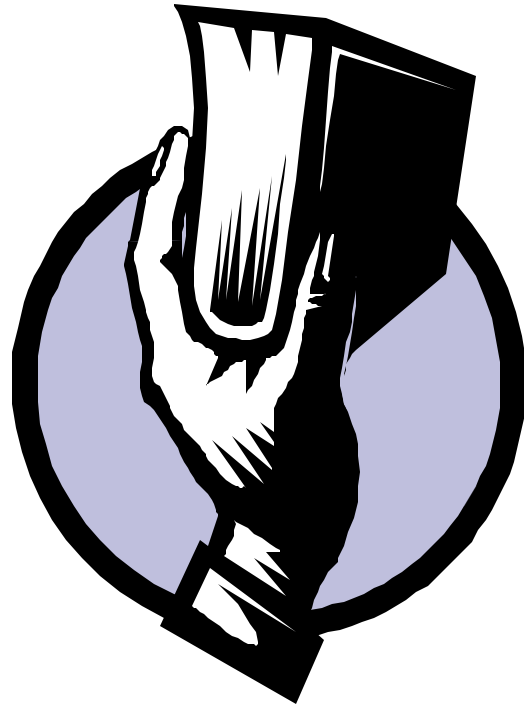
Sources:

- 29CFR1910.253 (b)(5)(ii)(K), "Cylinders shall never be used as rollers or supports, whether full or empty."
- 29CFR1926.350, (c) (1), "Cylinders, whether full or empty, shall not be used as rollers or supports."
- CGA P-1, 3.3.1, "Compressed gas cylinders shall not be used as rollers, supports, or for any other purpose other than to contain and use the contents received."



Conclusion

- History of CUSHR effort
- Handbook development
- Handbook use





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